

Remarks

Reconsideration of pending Claims 1-7, 11-27, 30-62, 78-110, 114-122, 124, 126-140, and 144-157 is respectfully requested.

Claims 1-2, 7, 13, 18, 23-27, 32-35, 41, 43, 45-46, 48-50, 53-57, 61, 78-100, 105-110, 126-127, 130-132, 134-137, 144, and 148-149 have been amended.

Claims 8-10, 28-29, 111-113, 123, 125, and 141-143 have been canceled.

No new matter has been added with the amendments to the claims, which are intended to merely clarify language used in the claims and/or the subject matter claimed. The scope of the claims is intended to be the same as before the amendment.

Rejection of Claims under 35 U.S.C. § 112(2)

The Examiner rejected Claims 43-62, 95-100, 105-110, 125-127, 130 and 132-137 under Section 112(2) for the use of indefinite claim language.

The claims have been amended as suggested by the Examiner to correct antecedent basis of the recited terms.

Claim 49 has been amended to recite "...the dielectric material layer comprises a high K dielectric material." Claim 50 has been amended to recite "...the high K dielectric material..."

Claim 55 has been amended to recite "... the lower polysilicon electrode..."

Claims 96-99 and 105-110 have been amended to recite "... the polysilicon first electrode..."

Claim 125 having been canceled, this rejection is considered moot.

Claim 105-110, 126-127, 130, and 132 have been amended to more clearly recite the subject matter claimed.

It is believed that the claims as amended satisfy the requirements of Section 112(2), and withdrawal of this rejection is respectfully requested.

Rejection of Claims under 35 U.S.C. §§ 102(b)/103)

The Examiner rejected the claims as follows:

- 1) Claims 1-8, 11-28, 30-32, 35-56, 78-80, 83-86, 89-100, 102, 104-112, 114-123, 125-131, 138-142, 145-151, and 156-157 under Section 102(b) as anticipated by US 2001/0024853 (Wallace);
- 2) Claims 33-34, 57-62, 101, 103, 124, 132-137 under Section 103(a) as obvious over Wallace in view of USP 6,218,256 (Agarwal);
- 3) Claims 10, 29, 81-82, 87-88, 113, 143-144, and 152 as obvious over Wallace in view of USP 6,893,979 (Khare);
- 4) Claims 153-155 as obvious over Wallace in view of USP 6,238,964 (Cho).

Insofar as this rejection is maintained in view of the claims as amended, this rejection is respectfully traversed.

Wallace discloses a method of forming an integrated circuit high-k capacitor with silicon electrodes. Agarwal discloses method of manufacturing electrode and capacitor structures. Khare discloses a method for forming a gate dielectric. Cho discloses a method for fabricating an upper electrode of a capacitor by inserting a TiN layer at an interface between a TiN upper electrode and a Ta₂O₃ dielectric layer.

The Examiner objected to Claim 9, indicating its allowance if rewritten to include the limitations of Claim 7 (the base claim; no intervening claims) (Office Action at page 14).

Claim 7 has been amended to include the limitations of Claim 9. The remaining independent claims have been likewise amended to clarify that the oxide or oxynitride layer is nitridized to form a nitride layer by exposure of the oxide layer to a *plasma mixture of nitrogen and helium or nitrogen and argon* (e.g., Claims 1-2), by exposure to a *plasma generated nitrogen species* (e.g., Claim 13), or in a *plasma generated nitrogen gas* (e.g., Claim 18).

It is also noted that Claim 87-88 recite "exposing the oxynitride layer to a *plasma source of nitrogen* to nitridize the oxynitride layer." Claim 152 recites "...exposing the oxynitride layer to a *remote plasma source of nitrogen*."

It is submitted that Wallace, either alone or in combination with the secondary references, does not teach or suggest Applicant's method of forming a dielectric layer as recited in the claims as amended. Accordingly, withdrawal of the rejections of the claims is respectfully requested.

Extension of Term. The proceedings herein are for a patent application and the provisions of 37 CFR § 1.136 apply. Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that Applicant has inadvertently overlooked the need for a petition for extension of time. If any extension and/or fee are required, please charge Account No. 23-2053.

It is respectfully submitted that the claims are in condition for allowance and notification to that effect is earnestly solicited. The Examiner is urged to telephone the undersigned attorney if any questions should arise.

Respectfully submitted,



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